

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000048**Date Inspected:** 14-Dec-2006**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

CWI Name:	Liu Liu	CWI Present:	Yes	No
Inspected CWI report:	Yes No N/A	Rod Oven in Use:	Yes No N/A	
Electrode to specification:	Yes No N/A	Weld Procedures Followed:	Yes No N/A	
Qualified Welders:	Yes No N/A	Verified Joint Fit-up:	Yes No N/A	
Approved Drawings:	Yes No N/A	Approved WPS:	Yes No N/A	
		Delayed / Cancelled:	Yes No N/A	
Bridge No:	34-0006	Component:		

Summary of Items Observed:

Office of Structural Materials Quality Assurance Inspector (QA), David McClary observed quality control functions related to procedure qualification (PQR) testing at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

The QA Inspector observed RT film on 1G Flux Core Arc Welding (FCAW) procedure identified as HP-2006107-7. No rejectable discontinuities were observed.

The QA Inspector observed welding of a Procedure Qualification (PQR) test plate identified as HP-2006119-5.

The test was conducted using Gas Metal Arc Welding (GMAW), Supertech SM-71, electrode in the 1G (flat) position to AWS D1.5, Section 5.13 (Production Procedure). ZPMC has changed to a 70% Argon, 30% CO2 gas mixture. The QA Inspector observed ZPMC Quality Control (QC) recording the essential variable (amps, volts, travel speed) for each pass and randomly verified the parameters using a Fluke® amperage / voltage meter and a stopwatch. The welding appeared to comply with the contract documents.

The QA Inspector observed continued welding of a Procedure Qualification (PQR) test plate identified as HP-2006130. The test was conducted using Submerged Arc Welding (SAW), Lincoln LA-85 electrode with MIL-800 HPNi flux in the 1G (flat) position to AWS D1.5, Section 5.13 (Production Procedure) on 75mm thick HPS 485W material. Welding was not completed by the end of the shift and will continue tomorrow. The QA Inspector still observed contamination issues with the flux that had been addressed with ZPMCs Quality Control yesterday. See photo below depicting the burning of contaminants behind the welding arc.

The QA Inspector performed a random observation of machining operations of the 1G FCAW procedure identified as HP-2006107-7 test samples. Mechanical testing is scheduled for tomorrow.

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Summary of Conversations:

ZPMC Engineer Mr. Chen Bin informed QA that ZPMC would be shipping the 75mm HPS 485W test plate to an outside testing laboratory for RT testing after it is completed. The outside laboratory has a Iridium 192 radiation source to perform the testing. ZPMCs on site X-ray equipment does not have sufficient penetrating abilities to test this thickness of material.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	McClary, David	Quality Assurance Inspector
Reviewed By:	Lowry, Patrick	QA Reviewer
